



UNCLASSIFIED
UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

SEP 14 1968

*PLS
Return to
G. Bunn*

Senator John Sherman Cooper
United States Senate

Dear Senator Cooper:

I am enclosing AEC's answers to the questions on the Non-Proliferation Treaty, contained in your letter of August 22, 1968.

If we can be of any further assistance, please call upon us.

Cordially,

/s/ Chairman

Chairman

Enclosure:
As stated

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DATE: JANUARY 15, 2020

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U.S. ARMS CONTROL
AND
DISARMAMENT AGENCY

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Question: 1. What are the non-nuclear-weapon countries to which the US had provided or agreed to provide nuclear assistance for peaceful purposes prior to becoming a signatory to the Non-Proliferation Treaty?

Answer: The US has provided, or agreed to provide some form of assistance in the peaceful uses of atomic energy to the following countries:

Argentina	Israel
Australia	Italy
Austria	Japan
Belgium	Korea
Brazil	Lebanon
Canada	Netherland
China	New Zealand
Chile	Norway
Colombia	Nicaragua
Costa Rica	Pakistan
Cuba	Philippines
Denmark	Portugal
Dominican Republic	Peru
Ecuador	South Africa
Federal Republic of	Spain
Germany	Sweden
Greece	Switzerland
Guatemala	Thailand
India	Turkey
Indonesia	Uruguay
Iran	Venezuela
Iraq	Vietnam
Ireland	Yugoslavia

Question: 2. Your statement to the Foreign Relations Committee on July 12 noted that the United States had required in its prior agreements with such non-nuclear-weapon countries, on-site inspection by the US, maintenance of records and reports open to the US upon request, and access to all data and all plants at all times by the US. Do you consider that such requirements were necessary for an effective safeguards system?

Answer: The answer to this question is "yes". This answer must be viewed in light of safeguards history and of a technical factor which has played a major role in the development of safeguards. That factor is the recognition that small quantities of nuclear material are of minimal significance and the resulting lack of need to rigorously safeguard such insignificant material. Under the Atoms for Peace Program, the first agreements calling for the export of reactors and fissionable material abroad were executed in 1955. These early agreements were limited to the export of research reactors and small quantities of material with a maximum enrichment of 20% U-235. To a degree, therefore, they reduced the safeguards problem by limiting the kinds of assistance to those which were inherently of little or no military significance. These limitations were possible because there was no immediate requirement for cooperation of a kind where a more comprehensive safeguards system would clearly be needed. Despite these limitations even the earliest agreements contained provisions which gave the United States the right to observe from time to time the research reactors and fuel provided for them to determine that they were being employed for the purposes set forth in the agreements. The agreements also required the keeping of records and submission of periodic reports. In practice, these limited rights were entirely adequate to apply the kinds of safeguards required for these materials and equipment.

The Atoms for Peace Program contemplated from the outset that assistance would eventually be given and materials would be distributed for use in the generation of power by nuclear reactors. This meant that eventually large quantities of plutonium would result from the cooperative activities and the development of a safeguards system to accommodate this problem was therefore pursued. It was recognized that the application of an effective safeguards system for such a program would depend on the acquisition of ample rights on behalf of the inspecting authority to enable him to undertake the necessary control measures. Thus, the first step was the formulation of this system of rights. If these rights could be made sufficiently broad, the development of the detailed techniques of control could continue over a longer period, since the actual construction and operation of reactors producing large amounts of plutonium was several years away. Indeed, it can be said that a safeguards system consists of both the rights vested in the controlling authority and the actual measures by which these rights are implemented. The existence of the rights themselves, so long as the possibility of their implementation is maintained through the activities of the inspectorate, is an important element in the total effectiveness of the system.

The system of rights included in US comprehensive bilateral agreements beginning in 1956 and, in almost identical words, in the Statute of the IAEA, are an impressive and unprecedented step in international relations. They provide the inspecting authority, that is, the United States in the case of bilateral safeguards and the IAEA in the case of Agency arrangements, with the right to send into the recipient country inspectors who shall have access at all times and to all places and data as necessary to account for material and to determine that the commitment to peaceful uses is being observed. This right of access is the central right on which the United States and the IAEA systems are based. It has proven to be sufficiently broad so that any reasonably conceivable safeguard system required by practice can be fitted within it. There are supplementary but important rights -- again quite comparable in both US bilaterals and the Agency Statute. These include the right to review the design of facilities for the sole purpose of assuring that effective safeguards can be applied, the right to require the maintenance of satisfactory records, and the right to require periodic reports about the safeguarded activities.

Question: 3. You noted in your testimony that the U.S. has now by trilateral agreements, transferred to the IAEA United States' responsibility for maintaining safeguards. Do the trilateral agreements impose on the IAEA the same safeguard requirements imposed by the U.S. in its prior bilateral agreements -- that is, on-site inspection, maintenance of records and reports open to the IAEA on request, and access to all data and all places at all times?

Answer: As noted above, the IAEA rights and the U.S. rights are quite comparable. The IAEA procedures and the USAEC procedures for international inspections, are carried out, where appropriate, in a manner consistent with each other. The IAEA requires access for its inspections on a frequency which is determined by the quantity of nuclear material that the facility to be inspected either possesses as inventory or annually processes or produces.

Question: 4. If safeguard requirements imposed by the U.S. in its bilateral agreements were omitted in the trilateral agreements, do you consider the safeguards required by IAEA in the trilateral agreements

- (a) as effective as those required by the U.S. in the bilateral agreements?
- (b) effective and reliable safeguards for the purposes of the Non-Proliferation Treaty?

Answer: (a) As stated in response to question three above, the trilateral agreements and bilateral agreements in effect call for the same safeguards arrangements. The AEC as a matter of administrative policy follows the IAEA safeguards document in applying safeguards under the bilaterals. The IAEA trilateral agreements also provide for the application of the procedures set forth in the IAEA safeguards document. It is, therefore, our conclusion that the safeguards required by the IAEA in the trilateral agreements are as effective as those required by the U.S. in the bilateral agreements.

(b) As stated above, the safeguards required by IAEA in the trilateral agreements contain the essential elements of a safeguards system. These elements are on-site inspections and an established system within the safeguards activity of records and reports. Safeguards based on these elements can be expected to constitute a reliable and effective system for the purpose of the verification of the fulfillment of the obligation assumed by each non-nuclear-weapon state under the NPT with a view to preventing diversion of nuclear materials from peaceful uses to nuclear weapons or other nuclear explosive devices; the purposes stated in the Non-Proliferation Treaty of the safeguards to be applied by IAEA under the Treaty.

Question: 5. Will you please provide for the record typical examples of such bilateral and trilateral agreements?

Answer: Enclosed are the following examples:

- a. Atomic Energy Cooperation for Civil Uses Agreement Between the United States of America and Japan, signed at Washington on February 26, 1968.
- b. Atomic Energy Cooperation for Civil Uses Agreement Between the United States of America and Argentina, signed at Washington on June 22, 1962.
- c. Safeguards Agreement Between the United States of America, Japan, and the International Atomic Energy Agency, signed at Vienna on July 10, 1968.
- d. Safeguards Agreement Between the United States of America, Argentina, and the International Atomic Energy Agency, signed at Vienna on December 2, 1964.

Question: 6. Can you state whether or not the safeguards now administered by the IAEA have been administered effectively? //

Answer: The USAEC does consider that the IAEA administers its safeguards effectively. This opinion is based on information gathered by our close association with nations inspected by the IAEA and as a consequence of our US membership in the IAEA Board of Governors. Furthermore, for the past ten years the US has had personnel functioning as senior staff members of the IAEA safeguards organization and has provided to the IAEA expert technical advice on the subject of safeguards based on the US domestic safeguards program and US research and development in this field.

Since 1962, the US has had four reactors and a chemical processing plant (which recovered the plutonium from one of those reactors), as well as a storage facility where this plutonium was stored subject to IAEA safeguards. USAEC members have worked closely with the IAEA staff which have carried out the safeguards in connection with these facilities. The opinion gained as a result of that close association has been that the IAEA has effectively carried out its safeguards program.] |

Question: 7. Have there been complaints of improper, ineffective or poorly administered safeguards?

Answer: To our knowledge there have been no official complaints of improper, ineffective or poorly administered safeguards made to the IAEA, its Board of Governors or its General Conference. Nor have any such official complaints about the IAEA been raised with the U.S. Government, to our knowledge with other governments.

As I noted in my testimony before the Committee on Foreign Relations on July 12, several countries expressed concern that the IAEA safeguards might serve to place the non-nuclear-weapons states at a commercial disadvantage. We have felt these fears to be groundless. I also testified that we believe the IAEA could discharge its safeguards responsibility effectively.

It is inevitable that for an evolving system of international controls involving, inter alia, inspections by foreign nationals there will be concern expressed by various individuals and nations that some aspects of the system are inefficient or excessively strict. Safeguards represent a form of regulation, and, as in all cases of regulation, many of the affected parties often favor less strict control. Such complaints will probably continue to be voiced, formally and informally, as the various conflicting views of those involved in safeguards are exchanged and eventually resolved. For example, an article in the June 1968 issue of "Atoms in Japan", the monthly publication of the Japanese Atomic Industrial Forum, might be considered as an implied but unofficial complaint about the initial IAEA safeguards inspection of the JAPC Tokai Nuclear Power Station. (The article did note, however, the difficult circumstances during the inspection because "... an army of TV cameramen and newspaper reporters followed wherever the [inspectors] went within the reactor site.") Constructive suggestions of how the safeguards system might be more effectively and efficiently administered are, of course, welcomed by the IAEA so that the system can be improved.

The U.S., as well, will support any measures necessary to correct bone fide complaints about the administration of IAEA safeguards. As noted above, however, to date we have not had to do this, and we anticipate that little, if any, action of this type will be necessary.

Question: 8. Have there been breaches of substance and, if so, if not classified, could you identify countries breaching safeguards?

Answer: To our knowledge, there have been no breaches of any agreement covering safeguards related to nuclear material or equipment supplied by the US for that matter, by any state.

Question: 9. Do you consider the present organization of IAEA charged with responsibility for maintaining safeguards adequate in funding, personnel and technical competence?

Answer: As I mentioned in my statement during the Hearings before the Committee on Foreign Relations on July 12, the present IAEA safeguards staff, while modest in size, is in balance with the size of the workload for which the Agency has had responsibility to date. The U.S. has participated in the Administrative and Budget Committee of the IAEA Board of Governors and in the Board itself and the General Conference of the Agency in the review and approval of the Agency's budget with particular attention on our part to the items relating to safeguards. In the context of the current workload, we have felt the funding and personnel ceilings provided for the Department of Safeguards and Inspection, the organization of IAEA charged with responsibility for maintaining safeguards, have been adequate. (~~See also answer to question 11.~~)

The Director General of the IAEA is required to consult with the Board of Governors with regard to the proposed nomination of an Agency employee to serve as a safeguards inspector. In connection with this consultation, the U.S. as a member of the Board of Governors obtains information on the qualifications of the individual inspectors. From this information, we have concluded that the personnel being named as inspectors are well-qualified as to education and training to be safeguards inspectors. In addition, as a result of the IAEA's inspection activities in the United States of those facilities which have been voluntarily submitted to IAEA safeguards and also by virtue of the close liaison maintained between the IAEA and AEC safeguards staff, AEC safeguards personnel have had an opportunity to observe the performance of most of the members of the Agency's safeguards staff and have been favorably impressed by their technical competence. In the area of safeguards research and development, the Agency's budget is small; approximately \$100,000 per year. We have felt it unnecessary to press for a larger safeguards research and development budget in the Agency because in meeting our own responsibilities in this area, the U.S. Government has established a comprehensive research and development program and we are working closely with the Agency to make sure the results of this research and development are available to IAEA to be used as appropriate in Agency safeguards. Other governments are also conducting substantial safeguards research and development programs. The Agency is serving a valuable role in coordinating these programs and as a means of exchanging information on safeguards developments.

Question: 10. Can you provide up-to-date information, stating the number of persons engaged in the responsibility of maintaining safeguards for IAEA -- stating separately the number of inspectors, and the cost of such safeguards?

Answer: The IAEA safeguards organization consists of 24 professional and 13 support personnel. It is estimated that in CY 1969 the staff will be increased to 34 professional and 18 support personnel. Twenty-two of the 24 professional personnel mentioned above have been designated to serve as safeguards inspectors.

The IAEA safeguards budget figures for CY 1968 and CY 1969 (estimated) are as follows:

	<u>CY 1968</u>	<u>CY 1969</u>
Panels and Committees	\$ 6,000	\$ 13,000
Scientific and technical services	95,000	150,000
Salaries and wages	310,900	481,800
Common staff costs	123,300	183,800
Duty travel and missions	96,400	96,400
Representation and hospitality	2,700	3,000
	<u>\$634,300</u>	<u>\$928,000</u>

Question: 11. Do you consider the present organization of IAEA for maintaining safeguards adequate for its responsibilities under the Non-Proliferation Treaty?

Answer: As pointed out in connection with the estimates referred to in your question 12 below, the safeguards workload of the IAEA is expected to increase under the Non-Proliferation Treaty. We do not consider the present organization of IAEA for maintaining safeguards adequate in size to meet these increased responsibilities and a need to increase the staff size is recognized.

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Question: 12. The report of hearings of the Senate Committee on Foreign Relations provides varying estimates of increases in personnel that will be required for the maintenance of safeguards under the NPT and of large increases in cost. Has the AEC or any agency of the United States made a determination of the increase in the size of staff and additional cost that will be required?

Answer: In keeping with our responsibilities we have had estimates made by the AEC's Safeguards Technical Support Organization of IAEA safeguards costs and manpower requirements expected under the Non-Proliferation Treaty. Preliminary results of the studies are quoted in the report of the hearings to which you refer. It was pointed out in connection with these studies, that any study of this kind made at this time must be considered highly conjectural and tentative, subject to almost continual review and refinement. In this sense, no formal determination has been made of the required increase in staff and funds. The studies will serve as important references and as guidance in participating in the activities of the Agency, particularly the budgeting function. However, because of the various uncertainties involved, such as the rate of growth of nuclear power, and those which can arise from the IAEA determining in which of the activities among those offered by the U.S. and U.K. safeguards are to be applied, that a determination of a staff size requirement cannot be made at this time.

Question: 13. Do you contemplate any difficulty in the development of an IAEA staff and inspectors capable of administering effectively safeguards under the treaty? Are any arrangements being made for their selection and training?

Answer: As I noted in my testimony of July 12, 1968, although there will be a certain amount of difficulty in expanding the IAEA safeguards inspector staff to administer effectively safeguards under the Non-Proliferation Treaty (NPT), we are confident that these difficulties can be overcome with the cooperation of the IAEA member states in making available their qualified personnel for this purpose. In this connection, it should be noted that the USAEC is initiating, beginning in September 1968, a safeguards training course at Argonne National Laboratory, Chicago. This course, which is intended to deal with all phases of safeguards, both domestic and international, is directed at the supervisory level. The IAEA is also developing arrangements for the selection and training of safeguards inspectors, both for its current needs and for future requirements under the NPT.

Question: 14. Have discussions been held in the IAEA or by ENDC or between the nuclear powers, signatories to the treaty, concerning the financing of additional cost and, if so, have any agreements been concluded?

Answer: Definitive discussions concerning the financing of costs of IAEA safeguards arising from the NPT have not been held and no agreements have been concluded. The question of financing safeguards was not officially discussed in the negotiations of the NPT. As indicated in our answer to Question 12, estimates of these costs have been made by AEC's safeguards Technical Support Organization so that the dimensions of the problem can be foreseen. The positions taken by the nuclear powers in IAEA discussions of financing existing IAEA safeguards agreements do not necessarily fore-shadow the future positions on financing safeguards under NPT. The U.S. has taken the position that, since the beneficiary of safeguards is not only the country in which the reactor is located but the world at large, it is in accordance with financial provisions of the IAEA Statute that the costs should and could legally be borne by the Agency. The U.S. prefers that the existing system of financing should continue; namely, that safeguards would be financed out of the IAEA budget rather than by the parties directly concerned.

Question: 15. Have discussions been held within IAEA concerning standards of safeguards that IAEA will require of non-nuclear-weapon powers?

Answer: The IAEA is concerned with the establishment of the standards for safeguards implementation under the requirements of the NPT and has held internal discussions on this subject.

Question: 16. Can you indicate whether the decisions respecting safeguards required will be made by the Board of Governors or the General Conference of the IAEA and whether by majority vote?

Answer: The IAEA's safeguards system has been established by a series of decisions of the Board of Governors. While the decisions of the Board are usually made on the basis of majority votes, certain categories of decisions, such as the budget, call automatically for a two-thirds vote by the Board. On other important questions, a majority of the Governors may call for a two-thirds vote by the Board. The administration of the safeguards approved by the Board is carried out by the Director General who is appointed by the Board of Governors with the approval of the General Conference. The safeguards staff is headed by an Inspector General who is appointed by the Director General.

The Board has referred each document in the safeguards system to the General Conference for comments and has considered any views expressed in the Conference in putting the safeguards system into effect. We anticipate that this procedure would continue to be followed. Also, each of the safeguards agreements that the IAEA would enter into with participating countries or international organizations would be subject to approval by the Board of Governors.

Question: 17. It is correct, is it not, that the IAEA will have the ultimate decision as to safeguards required of each non-nuclear-weapon state, even though Article III speaks of negotiations?

Answer: Article III sets forth standards for the international safeguards to be applied. The safeguards must be those set forth in an agreement negotiated and concluded "with the International Atomic Energy Agency in accordance with the Statute of the International Atomic Energy and the Agency's safeguards system." As I stated in my testimony on July 12, 1968, each of the agreements that the IAEA would enter into with each of the participating countries or international organizations would be subject to ratification or approval by the Board of Governors of the IAEA. Thus, the safeguards provided for would have to be satisfactory to the IAEA.

During negotiations on Article III of the NPT, it was recognized that any safeguards arrangement concluded between the IAEA and a non-nuclear-weapon Party, or Parties, to the Treaty must provide adequate assurances to the IAEA and to the world at large that diversions of material to nuclear weapons or other nuclear explosive devices are not taking place. Therefore, the principles which the US Co-Chairman announced to the ENDC on January 18, 1968, (see answer to question 20) fully recognize that the IAEA must be able to satisfy itself in each case that diversions are not taking place. On the other hand, in order to avoid unnecessary duplication, the principles also call for the IAEA to take existing safeguards systems fully into account and to make appropriate use of existing records and safeguards in devising the detailed arrangements. The task of translating these principles into specific arrangements with the IAEA will be the subject of negotiations with Parties to the Treaty.

Question: 18. It is correct, is it not, that safeguards will not be necessarily uniform, and that stricter safeguards may be imposed on some non-nuclear-weapons states than on others?

Answer: It is a matter of IAEA policy that safeguards procedures applied in any context, are uniform for comparable situations. Their implementation as regards frequency of inspection and reports, etc. is based on the quantities of nuclear material which a state possesses as inventory or processes, or produces. In determining the actual frequency of inspection of reactors, the Agency considers whether the inspected state possesses irradiated fuel reprocessing facilities, the nature of the reactor, as well as the nature and amount of the nuclear material produced or used in the reactor.

This policy and the three principles of safeguarding stated in the answer to question 20 are relevant to agreements concluded with individual states or with groups of states. However, we do not believe that the character of the safeguard arrangement concluded between the IAEA and a state or group of states subjected to a regional multilateral safeguard system necessarily will be the same in every respect with the arrangements concluded with a state not participating in such a system. The arrangements concluded with the Euratom-member states undoubtedly will have to take into account, in appropriate fashion, that these states already are being subject to a multilateral regional safeguards system which is operating effectively. While the form of these two types of arrangements may differ, we feel that all of the arrangements concluded by the IAEA will have to provide adequate and comparable assurance that diversions to nuclear weapons or other nuclear explosive devices are not taking place.

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Question: 19. Do you know whether any state, in discussions regarding NPT, has expressed concern that IAEA might impose on it unacceptable requirements for safeguards?

Answer: During the course of discussions with non-nuclear-weapon states concerning the proposed safeguards requirements for the draft NPT, some questions were raised about the nature of the safeguards and the possibility of additional, possibly unacceptable, safeguards requirements being imposed in the future without the consent of the non-nuclear-weapon party.

Responding to such concerns, the US stated that the safeguards to be applied under the NPT are those to be specified in agreements negotiated and concluded in accordance with the Agency's Statute and safeguards system. In the future, the IAEA may adopt changes in its requirements for safeguards. However, as the US representative to the ENDC stated on February 21, 1968, "... changes made after the negotiation of the safeguards agreement could be applied by IAEA only with the consent of the Parties to the safeguards agreement, a consent to be given either through some general procedure agreed to in advance or through subsequent modifications made in agreements with the Agency."

The US offer of December 2, 1967, that "when safeguards are applied under the NPT, the US will permit the IAEA to apply its safeguards to all nuclear activities in the US excluding only those with direct national security significance," further demonstrated the US belief that the IAEA would not impose unacceptable requirements for safeguards under the NPT.

Question: 20. Can you state whether the questions raised by EURATOM countries regarding safeguards have been resolved? What specific questions were raised? How were their questions resolved?

Answer: As Secretary Rusk noted in his statement to the Foreign Relations Committee on July 10, 1968, the main problem raised by EURATOM member states concerning a safeguards article for the NPT arose out of the existence of two international safeguards systems; the IAEA and EURATOM. As the Secretary stated, "the Common Market countries were reluctant to allow the IAEA safeguards system to operate in their countries for fear that it would result in abandonment of the EURATOM system, with unfavorable effects on progress toward European unity." For this reason, the US made clear during its negotiations with the Soviets that both the EURATOM and IAEA safeguards systems should be permitted to continue.

These and other concerns of non-nuclear-weapon states were taken into consideration in formulating the compromise Article III. Additionally, after extensive consultation with our NATO allies, which include the members of EURATOM, the US announced the following three guiding principles which are to be taken into account in negotiating any IAEA safeguards agreements pursuant to the NPT:

"1. There should be safeguards for all non-nuclear-weapon parties of such a nature that all parties can have confidence in their effectiveness. Therefore safeguards established by an agreement negotiated and concluded with the IAEA in accordance with the Statute of the IAEA and the Agency's safeguards system must enable the IAEA to carry out its responsibility of providing assurance that no diversion is taking place.

"2. In discharging their obligations under Article III, non-nuclear-weapon parties may negotiate safeguards agreements with the IAEA individually or together with other parties; and, specifically, an agreement covering such obligations may be entered into between the IAEA and another international organization the work of which is related to the IAEA and the membership of which includes the parties concerned.

"3. In order to avoid unnecessary duplication, the IAEA should make appropriate use of existing records and safeguards, provided that under such mutually agreed arrangements IAEA can satisfy itself that nuclear material is not diverted to nuclear weapons or other nuclear explosive devices."

Furthermore, on December 2, 1967, President Johnson announced that when "safeguards are applied under the NPT, the US will permit the IAEA to apply its safeguards to all nuclear activities in the US excluding only those with direct national security significance." This offer was made to meet a number of concerns which non-nuclear-weapon states, including EURATOM member states, had raised concerning the possibility of industrial espionage, and the possible competitive advantage to nuclear-weapon states not subject to IAEA safeguards. On December 4, 1967, the UK made a similar offer.

To date, three of the five non-nuclear-weapon member states of EURATOM (Belgium, the Netherlands, and Luxembourg) have signed the NPT after full consultations with the European Communities. Each of them has pointed out, among other things, that they do not consider that there is any incompatibility between the goals pursued by the NPT and the EURATOM Treaty; that the safeguards provided for in Article III of the NPT will be the subject of agreements to be concluded with the IAEA; and that it is their intention not to ratify the NPT before negotiations with the IAEA have produced an agreement.

Question: 21. Taking into consideration Article IV, Paragraph 2, and the seventh and eight paragraphs of the Preamble, what are the obligations of the United States under the treaty toward providing materials, equipment and scientific and technological information to nuclear-weapon and non-nuclear-weapon countries? Would the obligation extend to Communist and non-Communist countries alike?

Answer: As I indicated in my testimony on July 12, 1968, the US already is conducting a very extensive program of international cooperation in fields pertaining to the peaceful uses of atomic energy. We believe it would be within the spirit of the Treaty for the United States to continue this program and expand it wherever possible. We believe the language of Article IV clearly contemplates that each nation will do what it can to cooperate with the other Parties to the Treaty. We also believe that it may be possible for us to provide some special advantages, in terms of our cooperation to those non-nuclear-weapon nations that adhere to the Treaty. We are giving some thought to this problem and undoubtedly will wish to consult closely with the Congress on the matter.

We do not, however, interpret Article IV as meaning that the US will be compelled to embark on any costly new programs or as obliging the US to meet all requests and demands. Neither do we construe Article IV as overriding the provisions of the US Atomic Energy Act, nor will it remove the discretion we have in determining the nature of our cooperative relationships with other countries, on a case by case basis. The words "fullest possible exchange" in Article IV clearly imply that the Parties will be expected to cooperate only to the extent that they are able to do so, and that reciprocity may well be a factor in determining what is possible in certain circumstances.

Question: 22. Article V provides that non-nuclear-weapon states may obtain peaceful applications of nuclear explosions pursuant to a "special international agreement or agreements", or "pursuant to bilateral agreements". Would international observation be required in each case?

Answer: As I stated in my testimony on July 12, 1968, whether the peaceful nuclear explosion service is provided through an international body or bilaterally, "in each case, an opportunity shall be provided for appropriate international observation of the actual detonation."

Article V of the Treaty would require that a reasonable opportunity be offered for international observation of explosions conducted pursuant to that Article. In all probability, the IAEA will be invited to observe peaceful nuclear explosions conducted pursuant to Article V. If the invitation is extended in good faith and allows reasonable notice to permit the international observation, then we believe the obligation under this provision would be discharged, even if the IAEA or other international observers did not appear. On the other hand, if the arrangements for the carrying out of the nuclear explosion were such as to make international observation impracticable, then obviously there would not have been compliance with the provision.

Question: 23. While not an operative section of the treaty, does Paragraph six of the Preamble express any agreement or understanding on the part of the nuclear-weapon countries and, specifically on the part of the United States, to agree to a specific or limited method of inspection in any future agreements between the nuclear-weapon countries?

Answer: Paragraph six of the Preamble of the NPT expresses the intention of the Parties to support "research, development and other efforts to further the application, within the framework of the International Atomic Energy Agency safeguards system, of the principle of safeguarding effectively the flow of source and special fissionable materials by the use of instruments and other techniques at certain strategic points." Inclusion of the reference in the Preamble was based on the belief that the IAEA, in carrying out its responsibilities for the safeguarding of nuclear activities of non-nuclear-weapon states party to the treaty, in accordance with Article III, would have an interest in utilizing instruments and other new techniques to the maximum extent possible as soon as they are technically feasible. Such interest is motivated by widely shared desires to achieve the objectives of the safeguards system in the most efficient manner with minimum manpower and with the least possible intrusion into nuclear activities. In short, the Preambular reference only concerns the means by which the IAEA might meet its responsibilities, and does not imply any relaxation of those responsibilities or the effectiveness of safeguards. It is expected that the Board of Governors of the IAEA will take into account the results of safeguards research and development in administering the responsibilities of the IAEA under Article III.

The Non-Proliferation Treaty does not express or allude to any agreement or understanding concerning methods of inspection in any future agreements between the nuclear-weapon countries and no such agreements or understandings exist among them.

Question: 24. Please provide for the record the list of non-nuclear-weapon countries to which the UK, the USSR, Canada and France have provided nuclear assistance for peaceful purposes.

Answer: To our knowledge, the UK, USSR, Canada and France have provided assistance in the peaceful uses of atomic energy to the following countries:

UK: Australia, Belgium, Brazil, Canada, Chile, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, India, Israel, Italy, Japan, Mexico, Netherlands, Norway, Pakistan, Portugal, Romania, Spain, South Africa, Sweden and Switzerland.

USSR: Albania, Bulgaria, Communist China, Czechoslovakia, East Germany, Ghana, Hungary, India, Indonesia, Iraq, Mongolia, North Korea, North Vietnam, Pakistan, Poland, Romania, United Arab Republic and Yugoslavia.

Canada: Australia, Federal Republic of Germany, India, Italy, Japan, Pakistan, Romania, Spain, Sweden and Switzerland.

France: Argentina, Austria, Belgium, Brazil, Bulgaria, Canada, Central African Republic, Chile, Colombia, Czechoslovakia, Federal Republic of Germany, Gabon, India, Iran, Israel, Italy, Japan, Lebanon, Luxembourg, Madagascar, Netherlands, Nigeria, Peru, Poland, Romania, Senegal, South Africa, Spain, Switzerland, Uruguay, Venezuela and Yugoslavia.

Question: 25. Would you comment upon the statements made by Congressman Craig Hosmer regarding the inadequacy of safeguards?

Answer: Our comments on the adequacy of safeguards are given above, primarily in response to questions 9 and 6 and additionally in response to questions 11, 12 and 13. We have noted in the above cited responses the bases for our opinion that IAEA safeguards are adequate.

Additionally, the Commission and its contractors have had extensive experience in operating a wide variety of nuclear energy facilities and in performing the materials control measurements necessary for assuring their most economical and safe operation. It is our policy to assist the IAEA safeguards program by passing on such past experience and to continue to conduct research and development in an effort to further refine our understanding of the normal and expected operations of nuclear energy facilities. Based on the progress to date, we believe that the IAEA will be able to conduct effective inspection of nuclear facilities. Further we believe that any suspected diversion will be appropriately handled in the IAEA under the statutory provision requiring IAEA inspectors to report any non-compliance to the Director General of the Agency who thereupon must report it to the Board of Governors.

Basically, as an organization with many years of experience in safeguarding nuclear material the AEC is convinced that the IAEA can effectively safeguard the activities assigned to it pursuant to the NPT. We maintain this conviction recognizing that no system can be expected to be foolproof and that the Agency will have to increase its safeguards budget and manpower in order to handle the NPT responsibilities as they are incurred.